

REMARKS

Claims 1-25 are pending in the application. The Examiner found the drawings acceptable subject to the correction of informalities. Claims 1-5, 9-13, and 17-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. Claims 6-8 and 14-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Konno in view of Johnson, Jr. in further view of Hamano. Claims 1-19, 21, 23 and 25 have been amended, without new matter. Reexamination and reconsideration of the application in view of the amendments and the following remarks is requested.

The present invention as recited in amended claims 1-25 is directed to an optical element within an objective zoom lens that modifies the light passing through the zoom lens to a predetermined spectrum of light rays. Such an objective zoom lens may be used in conjunction with an electronic camera. The objective zoom lens includes two or more movable lens groups located between object space and the image plane, and an optical stop located between the movable lens groups and the image plane. The location of the optical element is critical. It must be placed between the optical stop and the image plane in a position such that it will receive substantially collimated and perpendicular light rays regardless of the movement of the lens groups. A coating on the surface of the optical element acts as an interference filter and produces the predetermined spectrum of light rays.

The Examiner found the drawings acceptable subject to the correction of informalities, particularly illegible reference numbers and lines. The Applicant has submitted new formal drawings herewith, with clearly identified reference numbers and lines, and therefore it is respectfully submitted that the objection to the drawings has been overcome.

Claims 1-5, 9-13, and 17-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. With the amendments to claims 1-5, 9-13, and 17-25, it is respectfully submitted that this rejection has been overcome.

Claim 1, as amended, describes an "objective zoom lens," and recites "an optical element located between the optical stop and the image plane on an optical axis of the zoom lens, the optical element having a surface at a location selected along the optical axis such that the optical element will receive light rays substantially collimated and perpendicular to said surface regardless of the movement of the two or more lens groups."

Konno only discloses a fixed prime lens, and contains no disclosure at all related to a zoom lens as recited in claim 1. The low pass filter in Konno does not have a surface that receives light rays substantially collimated and perpendicular to the surface regardless of the movement of the lens groups, as recited in claim 1. In fact, the surface of the filter passes light rays that are always converging on the image sensor regardless of the movement of the lens groups. In other words, Konno teaches a filter that always passes converging light rays. Konno only discloses a low pass filter, and completely fails to disclose, teach or suggest an interference filter for producing a predetermined spectrum of light, as recited in claim 1.

Johnson, Jr. fails to disclose, teach or suggest a zoom lens, two or more movable zoom groups, or an optical element having a surface located between the optical stop and an image plane that receives light rays substantially collimated and perpendicular to the surface regardless of the movement of the lens groups, as recited in claim 1. Johnson, Jr. discloses an interference filter for producing a predetermined spectrum of light, but only discloses the filter, and says nothing about where the filter may be located. Johnson, Jr. also contains no disclosure at all related to a lens, where the filter might be located in the lens, or the movement of lens groups within a lens, such as during focusing or zooming.

As demonstrated above, neither Konno nor Johnson, Jr. disclose, teach or suggest all of the limitations of amended claim 1 recited above. Therefore, it is respectfully submitted that the rejection of claim 1 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. has been overcome. In addition, because claims 2-5 and 9 depend from amended claim 1, the rejection of claims 2-5 and 9 under 35 U.S.C. §103(a) as being unpatentable over

Konno et al. in view of Johnson, Jr. has been overcome for the same reasons provided above with respect to amended claim 1.

It should also be noted that Hamano also fails to disclose, teach or suggest an optical element located between an optical stop and an image plane as recited in claim 1. Hamano teaches that in zoom lens embodiments, the low pass filter 1 must be located on the object space side of the aperture diaphragm 2, close to the aperture diaphragm and away from the magnification section 4 in order to minimize the change in the image separation width of the low pass filter (see FIG. 1 and col. 4 lines 52-55). Hamano therefore fact teaches away from locating an optical element between the optical stop and the image plane, as recited in claim 1. Thus, claim 1 and dependent claims 2-5 and 9 are also not obvious in view of Konno, Johnson, Jr., and Hamano.

Claim 10, as amended, describes an "objective zoom lens," and recites "an optically flat optical element located between the optical stop and the image plane, on and perpendicular to an optical axis of the lens at a location selected along the optical axis such that the optical element will receive substantially collimated light rays substantially perpendicular to the optical element regardless of the movement of the two or more lens groups."

Claim 10 was amended in a manner similar to claim 1 to recite a zoom lens embodiment having limitations similar to claim 1. As demonstrated above with regard to claim 1, neither Konno nor Johnson, Jr. disclose, teach or suggest all of the limitations of amended claim 10. Therefore, it is respectfully submitted that the rejection of claim 10 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. has been overcome. In addition, because claims 11-13 and 17 depend from amended claim 10, the rejection of claims 11-13 and 17 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. has been overcome for the same reasons provided above with respect to amended claim 10.

In addition, as demonstrated above with regard to claim 1, Hamano also fails to disclose, teach or suggest all of the limitations of amended claim 10, and in fact teaches away from locating an optical element between the optical stop and the image plane, as recited in claim 10. Thus, claim 10 and dependent claims 11-13 and 17 are also not obvious in view of Konno, Johnson, Jr., and Hamano.

Claim 18, as amended, describes the step of "providing an optical element surface located between the optical stop and the image plane within the objective zoom lens at a location where the light rays are substantially collimated and perpendicular to the optical element surface regardless of the movement of the two or more lens groups."

Claim 18 was amended in a manner similar to claim 1 to recite a zoom lens embodiment having limitations similar to claim 1. As demonstrated above with regard to claim 1, neither Konno nor Johnson, Jr. disclose, teach or suggest all of the limitations of amended claim 18. Therefore, it is respectfully submitted that the rejection of claim 18 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. has been overcome. In addition, because claims 19-22 and 24 depend from amended claim 18, the rejection of claims 19-22 and 24 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. has been overcome for the same reasons provided above with respect to amended claim 18.

In addition, as demonstrated above with regard to claim 1, Hamano also fails to disclose, teach or suggest all of the limitations of amended claim 18, and in fact teaches away from locating an optical element between the optical stop and the image plane, as recited in claim 18. Thus, claim 18 and dependent claims 19-22 and 24 are also not obvious in view of Konno, Johnson, Jr., and Hamano.

Claim 23, as amended, describes the step of "providing an optical element located between the optical stop and the image plane within the objective zoom lens at a location of

substantially collimated light rays substantially perpendicular to the optical element regardless of the movement of the two or more lens groups."

Claim 23 was amended in a manner similar to claim 1 to recite a zoom lens embodiment having limitations similar to claim 1. As demonstrated above with regard to claim 1, neither Konno nor Johnson, Jr. disclose, teach or suggest all of the limitations of amended claim 18. Therefore, it is respectfully submitted that the rejection of claim 23 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. has been overcome.

In addition, as demonstrated above with regard to claim 1, Hamano also fails to disclose, teach or suggest all of the limitations of amended claim 23, and in fact teaches away from locating an optical element between the optical stop and the image plane, as recited in claim 23. Thus, claim 23 is also not obvious in view of Konno, Johnson, Jr., and Hamano.

Claim 25, as amended, describes an "objective zoom lens," and recites "an optical element located between the optical stop and the image plane within the objective zoom lens at a location of substantially collimated light rays substantially perpendicular to the optical element regardless of the movement of the two or more lens groups."

Claim 25 was amended in a manner similar to claim 1 to recite a zoom lens embodiment having limitations similar to claim 1. As demonstrated above with regard to claim 1, neither Konno nor Johnson, Jr. disclose, teach or suggest all of the limitations of amended claim 25. Therefore, it is respectfully submitted that the rejection of claim 25 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. has been overcome.

In addition, as demonstrated above with regard to claim 1, Hamano also fails to disclose, teach or suggest all of the limitations of amended claim 25, and in fact teaches away from locating an optical element between the optical stop and the image plane, as recited in claim 25. Thus, claim 25 is also not obvious in view of Konno, Johnson, Jr., and Hamano.

Claims 6-8 and 14-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Konno in view of Johnson, Jr. in further view of Hamano. With the amendments to claims 1 and 10, and because claims 6-8 depend from amended claim 1 and claims 14-16 depend from amended claim 10, it is respectfully submitted that this rejection has been overcome.

As described above, neither Konno, Johnson, Jr., nor Hamano discloses, teaches or suggests all of the limitations of amended claim 1, and thus claim 1 is not obvious in view of those references. Because amended claims 6-8 depend from amended claim 1, claims 6-8 are also not obvious in view of Konno, Johnson, Jr., and Hamano, and the rejection of claims 6-8 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. has been overcome for the same reasons provided above with respect to amended claim 1.

Furthermore, as described above, neither Konno, Johnson, Jr., nor Hamano discloses, teaches or suggests all of the limitations of amended claim 10, and thus claim 10 is not obvious in view of those references. Because amended claims 14-16 depend from amended claim 10, claims 14-16 are also not obvious in view of Konno, Johnson, Jr., and Hamano, and the rejection of claims 14-16 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. in view of Johnson, Jr. has been overcome for the same reasons provided above with respect to amended claim 10.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

If, for any reason, the Examiner finds the application other than in condition for allowance, Applicants request that the Examiner contact the undersigned attorney at the Los Angeles telephone number (213) 892-5752 to discuss any steps necessary to place the application in condition for allowance.

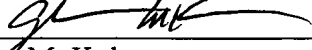
In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicants petition for

any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to

Deposit Account No. 03-1952 referencing docket no. 490962001000.

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Respectfully submitted,

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Enclosure: Replaement Drawings-Formal - 5 Sheets (Figs. 1-9)